Reg. No.

Question Paper Code : **51864**

B.E/B.Tech. DEGREE EXAMINATION, MAY/JUNE 2016

Seventh Semester

Mechanical Engineering

ME 2402/ME 72/10122 ME 703 – COMPUTER INTEGRATED MANUFACTURING

(Regulations 2008/2010)

(Common to PTME 2402/10122 ME 703 – Computer Integrated Manufacturing for

B.E. (Part-Time) Sixth Semester – Mechanical Engineering – Regulations 2009/2010)

Time : Three Hours   Maximum : 100 Marks

Answer ALL questions.

PART – A (10 × 2 = 20 Marks)

1. Explain :

    (i) Scaling

    (ii) Rotation

2. What is wire frame modelling ? Mention its objectives.

3. Mention few elements of CIM.

4. State the objectives of implementation of CIM.

5. What is process planning in a manufacturing system ?

6. What is cellular manufacturing ?

7. Name the different components of FMS.

8. How the different types of automatic storage and retrieval system are classified ?

9. Name any four functions of production, planning and control.

10. What is inventory management ?

PART – B (5 × 16 = 80 Marks)

11. (a) (i) Explain in detail about the surface modelling, with a neat sketch. Also mention the difference between surface modelling and solid modelling. **(8)**

    (ii) With suitable example, discuss the role of computers and softwares in Engineering Design. **(8)**

OR

    (b) (i) Explain the following terms and bring out their differences : **(8)**
        (1) CAD
        (2) CAM

    (ii) Discuss the features available in typical drafting softwares. **(8)**

12. (a) (i) Explain : (1) LAN model (2) MAP model **(8)**

    (ii) With an example, discuss the differences between CAM and CIM. **(8)**

OR

    (b) (i) Describe the seven layers of OSI model. **(10)**

    (ii) With a sketch, explain the working mechanism of ring networks. **(6)**

13. (a) (i) Enumerate the role of GT in CAD/CAM integration. **(8)**

    (ii) Describe the different elements and functioning of generative approach CAPP. State its advantages and limitations. **(8)**

OR

    (b) (i) Discuss D CLASS, M CLASS and OPTIZ coding systems with suitable examples. **(10)**

    (ii) Discuss how group technology is used in designing manufacturing cells. **(6)**

14. (a) (i) Explain the working principle of Bar Code technology. State any two of its applications in manufacturing. (8)

(ii) Sketch the layout of a typical FMS and explain the importance sub systems. (8)

OR

(b) (i) Describe the principle of an automated storage and retrieval system (AS/RS). How this is useful in FMS ? (8)

(ii) Discuss the need and importance of shop floor data collection systems ? What are their functions ? (8)

15. (a) (i) Discuss the principle, applications and advantages of Agile manufacturing. (8)

(ii) With an example, discuss the importance of in-process monitoring of work piece quality in CIM. Also describe the procedure involved in it. (8)

OR

(b) (i) Discuss the importance and devices that are required for shop floor control. (8)

(ii) Explain the different types of production monitoring systems. With an illustration, explain any one in detail. (8)

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